

Appl. No. 09/977,643
Amdt. dated August 25, 2005
Reply to Office Action of May 31, 2005

Amendments to the Drawings:

Included in the amendment are an "Annotated Sheet Showing Changes" and a "Replacement Sheet" for Figs. 1, 2A and 3. In Fig. 1, reference numbers "51" and "52" have been replaced with references "S1" and "S2", respectively, consistent with the text at page 1, line 15. In Fig. 2A, it is proposed to add reference numeral "100" for the telephone system to be consistent with the proposed amendment at page 6, line 12 changing "200" to "100". This change is being proposed to eliminate the duplicate use of the reference numeral "200" which was also used to refer to "ITG 200". Also, in Fig. 3, the text "TIME + LAMP" has been changed to "TIMESTAMP" consistent with the text at page 8, line 21.

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Remarks

The present amendment responds to the Official Action dated May 31, 2005. The Official Action objected to the Figs. 1 and 3. Claim 7 was rejected under the judicially created doctrine of double patenting. Claims 1 and 4 were rejected under 35 U.S.C. §102(b) based on Baran et al. U.S. Patent No. 4,771,425 (Baran). Claim 3 was rejected under 35 U.S.C. §103(a) based on Baran in view of Williams et al. U.S. Patent No. 5,883,891 (Williams). Claims 2, 5, 6 and 19 were rejected under 35 U.S.C. §103(a) based on Baran in view of Gordon U.S. Patent No. 5,608,786 (Gordon). Claim 7 was rejected under under 35 U.S.C. §103(a) based on Baran in view of Gordon and further in view of Williams. Claim 20 was rejected under under 35 U.S.C. §103(a) based Rahman et al. U.S. Patent No. 5,274,635 (Rahman) in view of Gordon. These grounds of rejection are addressed below following a brief discussion of the present invention to provide context.

Although Applicants do not acquiesce in the obviousness-type double patenting rejection, a terminal disclaimer is concurrently being filed herewith to obviate this rejection.

Claims 19 and 20 have been amended to be more clear and distinct. Claims 8-18 have been previously cancelled without prejudice. Claims 21 and 22 have been newly added. Claims 1-7 and 19-22 are presently pending.

The Present Invention

One aspect of the present invention is directed to systems and methods which substantially improve the efficiency of voice communications over a packetized communications

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system such as the Internet. The approach of the present invention supports the use of variable-length packets and accommodates variable jitter and loss. This aspect of the present invention also achieves increased efficiency, in part, by carrying multiple voice calls over the same transport level connection, thus, avoiding the setup and tear down overhead of creating a transport level connection for each voice call. Additionally, by multiplexing voice signals from multiple calls into a single packet, overhead is further reduced enhancing the ability to support low data-rate voice communications. Since new codecs are emerging which can support near toll-quality voice communications at only 8 kilobits per second (kbps) and acceptable quality at 4 kbps, and these low data rate codecs can significantly reduce the cost of providing ITG services, the present invention's support of low data rate codecs provides an additional cost advantage.

Objection to Figs. 1 and 3

The Examiner is thanked for carefully reading the specification and drawings. Fig. 1 was objected to because the reference numbers 51 and 52 did not match the reference numbers used in the specification, namely S1 and S2. Fig. 1 has now been corrected to contain reference numbers that correspond to the reference numbers in the specification. Fig. 3 was objected to because of a typographical error. In Fig. 3, the text "TIME+LAMP" is now being corrected to read "TIMESTAMP."

Amendments to the Specification and Fig. 2B

The remaining amendments were made in the parent U.S. Patent Application Serial No. 08/959,794 filed on October 29, 1997, now issued U.S. Patent No. 6,304,567. In particular, the paragraph beginning at page 6, line 11 has been amended to replace the reference number 200

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indicating the network with reference number 100 because reference number 200 was already used to indicate an ITG. The paragraph beginning at page 6, line 19 has been amended to clarify that both ITGs 200 and 201 contain a network card 204 as supported by Fig. 2A and to correct typographical errors. The paragraph beginning at page 8, line 23 has been amended to correspond to Fig. 3.

The Art Rejections

As addressed in greater detail below, Baran, Gordon, Williams and Rahman do not support the Official Action's reading of them and the rejections based thereupon should be reconsidered and withdrawn. Further, the Applicant does not acquiesce in the analysis of Baran, Gordon, Williams and Rahman made by the Official Action and respectfully traverses the Official Action's analysis underlying its rejections.

Claims 1 and 4 were rejected under 35 U.S.C. §102(b) based on Baran. Baran describes apparatus to multiplex standardized channels into a single channel wherein voice or data are packetized into independently addressable packets. Baran, Abstract. Far from addressing techniques for low bit rate Internet telephony as taught by the present invention, Baran addresses techniques for more efficient utilization of a trunk line such as a DS-1 or T-1 line. While Baran's Fig. 3B shows "the standard T-PCM frame of 24 serial channels each carrying an 8-bit sample," col. 6, lines 59-61, Baran describes a different approach in which "the entire frame forms a packet" in which multiple bits "are provided for packet address information" and the "information in each packet is directed to a single destination." (emphasis added) Baran, col. 6, line 66 – col. 7, line 11. An example of switched routing at col. 5, lines 58-60 of Baran recites

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that "terminal 64 may send successive packets of information to the computer 66 through one of two routes."

The Official Action relies on col. 6, line 59 – col. 7, line 3 and Fig. 3A of Baran as purportedly suggesting that a number of telephone calls are multiplexed into a single packet. Applicant respectfully disagrees. The relied upon text describes how a standard T-PCM frame of 24 serial channels each carrying an 8-bit sample can be allocated to form "a single packet." Although a single packet is illustrated in Fig. 3A as the Examiner suggests, the information carried in the single packet appears to relate to the same call. See, col. 7, lines 6-8 where it states "The information in each packet is directed to a single destination and is independent of the frame to which it is assigned." Baran does not teach and does not suggest "voice telephone calls ... multiplexed into a single packet" as presently claimed in claim 1.

Although Baran discloses trunk multiplexor 18 for switching a voice channel to a packet and vice versa, the trunk multiplexor 18 address an entirely different problem of distributing packets across various trunks. There simply is no disclosure that Baran's plurality of telephone sets 56, 58, 60, and 62 have portions of their "voice telephone calls ... multiplexed into a single packet" as presently claimed in claim 1.

Claim 3 was rejected under 35 U.S.C. §103(a) based on Baran in view of Williams. Williams fails to cure the deficiencies of Baran. Since claim 3 depends from and contains all the limitations of claim 1, claim 3 distinguishes from the references in the same manner as claim 1.

Claims 2, 5, 6 and 19 were rejected under 35 U.S.C. §103(a) based on Baran in view of Gordon. Gordon fails to cure the deficiencies of Baran. Since claims 2, 5, and 6 depend from

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and contain all the limitations of claim 1, claims 2, 5, and 6 distinguish from the references in the same manner as claim 1. Claim 19, as amended, recites "voice information received from different originators at the origination point and exchanged between ones of the gateways is multiplexed at the same transport level connection and in one data packet." (emphasis added). The Official Action again relies on Baran at col. 6, line 59 – col. 7, line 3 and Fig. 3A as purportedly suggesting this feature. As described above, Baran does not teach and does not suggest multiplexing information from different originators in one data packet as claimed in claim 19.

In light of Baran's September 15, 1988 issue date, rather than constituting evidence of obviousness, Baran is suggestive of the nonobviousness of the present invention. While the Official Action suggests that it is obvious to modify Baran based upon Gordon, it appears clear that Gordon in designing a system long after Baran does not adopt the techniques suggested to be obvious, but to the contrary, mainly addresses techniques for voicemail, facsimile mail and E-mail rather than voice telephony. See, Gordon, col. 1, lines 5-12, for example. The Official Action relies on Gordon at col. 8, line 62 - col. 9, line 4 as teaching the use of the Internet as a packet network for long distance telephony. The cited portion of text briefly addresses Internet telephony and appears to address an arrangement in which the connection is set up as each call is made and is torn down after each call is completed as discussed in the Background of the Present Invention. See, for example, Gordon col. 9, lines 12-14 which suggest that a packet path is established only as a call is originated rather than being maintained so long as calls are continued.

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Unlike Gordon, the present invention multiplexes voice information from different originators at the same transport level connection. Furthermore, the same transport level connection is maintained so long as voice information is received from one of the different originators. Claim 19, as presently amended, recites "voice information received from different originators at the origination point and exchanged between ones of the gateways is multiplexed at the same transport level connection and in one data packet that is sent over the Internet, the same transport level connection is maintained so long as voice information is received from one of the different originators." (emphasis added). Gordon and Baran, taken separately or in combination, do not teach and do not suggest multiplexing voice information at the same transport level connection and in one data packet as presently claimed in claim 19. Furthermore, Gordon and Baran, taken separately or in combination, do not teach and do not suggest maintaining the same transport level connection "so long as voice information is received from one of the different originators." Even if Gordon were combined with Baran as the Examiner suggests, the terms of the claims will not be met. Claim 19, as amended, therefore defines over the cited art and should be allowed.

Claim 7 was rejected under under 35 U.S.C. §103(a) based on Baran in view of Gordon and further in view of Williams. Williams fails to cure the deficiencies of Baran and Gordon. Since claim 7 depends indirectly from and contains all the limitations of claim 1, claim 7 distinguishes from the references in the same manner as claim 1. Therefore, claim 7 defines over the cited art and should be allowed.

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Claim 20 was rejected under under 35 U.S.C. §103(a) based Rahman in view of Gordon. Rahman addresses a method and apparatus for aligning a digital communication data stream across a cell network. To this end, Rahman receives digital data over a circuit switched communication link and assembles the digital data into a set of outbound communication cells for transfer over the cell network. Rahman, col. 3, lines 41-46. Fig. 3 of Rahman illustrates that digital information carried in each DS0 timeslot is assembled into a corresponding outbound cell to be sent over the cell network. See also Rahman, col. 7, lines 38-41. Each of the assembled outbound cells have a header portion which identifies the target for the communication cell, as well as address information and error checking information. Rahman, col. 7, lines 46-49.

Rahman's disclosure is silent with respect the outbound cells sharing the "same transport level connection" as claimed in presently amended claim 20. However, since the outbound cells are separate, it would appear that each outbound cell would have to have its own transport level connection in order to instruct the far end on how to reassemble cells corresponding to a particular DS0 timeslot. See Rahman, col. 7, lines 51-53.

The Official Action relies on Gordon as teaching that the Internet could be used as a packet network. Gordon fails to cure the deficiencies of Rahman. Even if Rahman and Gordon were combined as the Examiner suggests, the suggested combination would still fail to meet the terms of claim 20 as presently amended. Rahman and Gordon, taken separately or in combination, do not teach and do not suggest multiplexing voice information from different originators "at the same transport level connection," as claimed by presently amended claim 20. Therefore, claim 20 defines over the cited art and should be allowed.

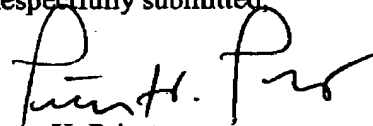
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New claims 21 and 22 have been added to cover more completely certain aspects of the present invention. Claims 21 and 22 also contain similar features as claim 19 and should define over the art in the same way as claim 19.

Conclusion

All of the presently pending claims, as amended, appearing to define over the applied references, withdrawal of the present rejection and prompt allowance are requested.

Respectfully submitted



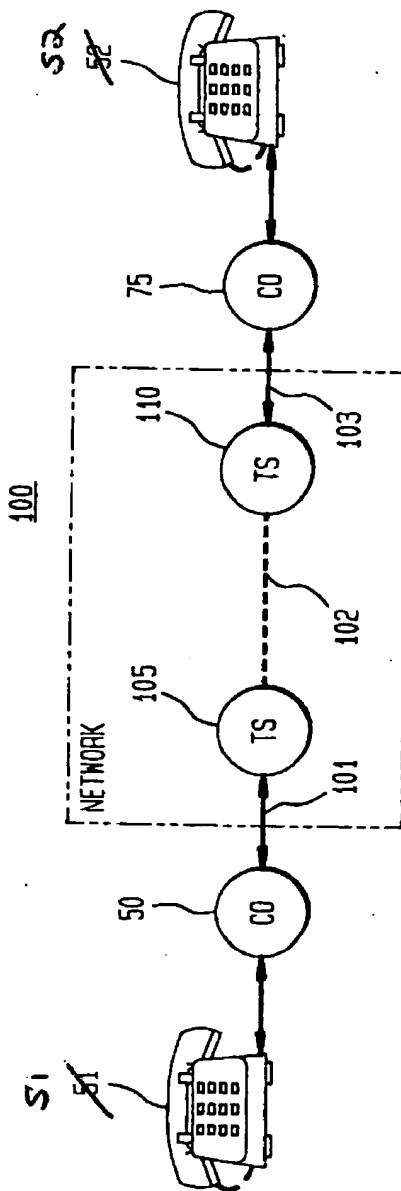
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J.D. ROSENBERG 11

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ANNOTATED SHEET SHOWING CHANGES
FOR APPL. SERIAL NO. 09/977,643

FIG. 1
(PRIOR ART)



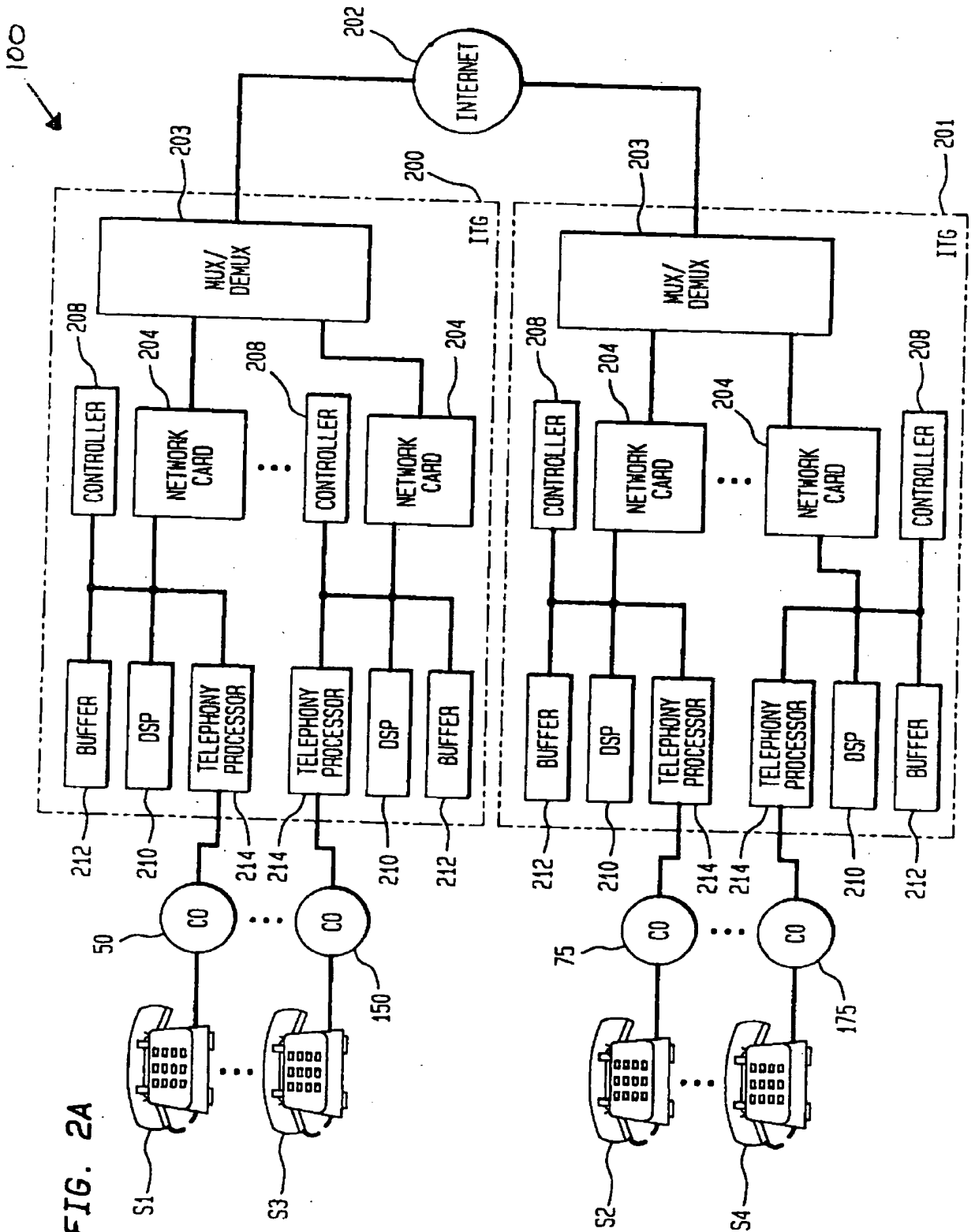
J.D. ROSENBERG 11

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ANNOTATED SHEET SHOWING CHANGES

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FIG. 2A



ANNOTATED SHEET SHOWING J.D. ROSENBERG 11
 CHANGES FOR APPL. SERIAL 4/5

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FIG. 3

300

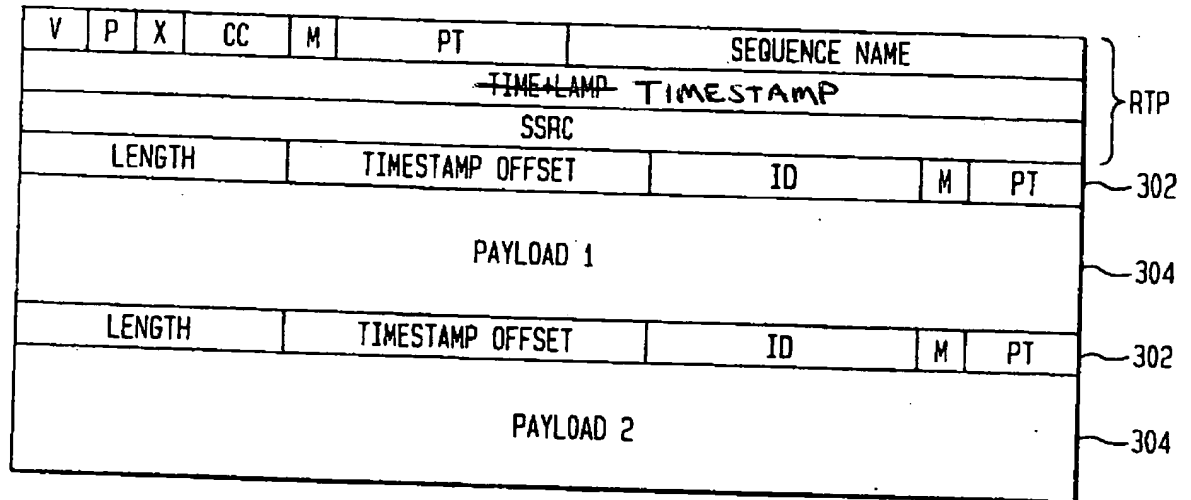


FIG. 4

